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Initial stages of 2,4,6-trinitrotoluene transformation by microorganisms

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Abstract

Screening of a wide range of microorganisms (32 strains) isolated from various anthropogenic and natural environments and of a number of collection strains showed that the early stages of 2,4,6-trinitrotoluene (TNT) transformation by the majority of the strains studied resulted in the formation of hydroxylaminodinitrotoluenes (HADNTs). The levels of HADNTs were in a number of cases comparable to the initial TNT level. The alternative reductive attack at TNT through the reduction of the aromatic ring was not characteristic of most of the prokaryotes studied. The susceptibility to the toxic effect of TNT was different for gram-positive and gram-negative bacteria.

Keywords

2,4,6-trinitrotoluene, Hydroxylaminodinitrotoluenes, Initial transformation